

October 10, 1951.

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Dear Pete:

Earlier this summer, I wrote to you asking permission to quote your private communication on the behavior towards streptomycin of strain 58-278 which we were using in connection with a demonstration of indirect selection of adaptive mutants by replica plating. Ben Rubin told me later that you spent the summer in California and may not have promptly gotten my letter, nor been able to attend to it. I hope you hold no objection to this quotation, but I will be glad to delete it from our ms. when J. Bact. returns proof, if you should wish it.

Last summer, before the CSH symposium in June, I used replica plating to analyze segregations of crosses involving am -standard sensitive x am -resistant from standard sensitive (S^S x S^R), and noticed then that some recombinants gave a rather fuzzy response compared to the clear cut difference between the parents. After seeing 58-278 in this system, it occurred to me that our "standard" S^R might actually be S^R Ms^+ . Dr. David Skaar just recently joined our lab. staff, and at my suggestion he looked into the matter further. In at least one cross, he has extracted S^S Ms^+ (i.e., a type like 58-278) in a high proportion of segregants from an S^S Ms^- x S^R [and we thought Ms^-]. He obtained the same result, less surprisingly from S^S Ms^- x S^R Ms^+ [i.e., 58-278 S^R]. The experiments support the hypothesis that Ms is a locus distinct from S and modifying the observed mutability of the latter, (exactly as you proposed almost two years ago). They also may support the thesis that spontaneous mutation of standard S^S to S^R is a two-step affair: first Ms^- to Ms^+ , and then S^S to S^R as accelerated by the latter.

Your earlier letter mentioned that you were continuing your investigation of 58-278, and we hesitate to go any further into the whole problem before consulting with you. The experiments were initiated as a pedagogic exercise for Dr. Skaar, but with the investment of some further effort it might be possible to confirm the two-step picture of ~~this~~ mutation, to S^R . If you have contemplated a similar analysis yourself, or if you can suggest a feasible division of labor, please let us know in either case.

Sincerely,

Jeshua Lederberg